

Claims

1 SUBA17 1. An encoder for encoding a sequence of video data,  
2 said encoder comprising:

3 storage for holding multiple sets of quantization  
4 matrix tables;

5 a quantizer for quantizing said sequence of video  
6 data using one set of quantization matrix tables of  
7 said multiple sets of quantization matrix tables; and

8 means for dynamically switching said quantizer  
9 from using said one set of quantization matrix tables  
10 to using another set of quantization matrix tables of  
11 said multiple sets of quantization matrix tables.

1 2. The encoder of claim 1, wherein said means for  
2 dynamically switching comprises means for switching said  
3 quantizer from using said one set of quantizer matrix tables  
4 to using said another set of quantizer matrix tables at a  
5 picture boundary of said sequence of video data.

1 3. The encoder of claim 2, wherein said means for  
2 switching said quantizer at said picture boundary comprises  
3 means for switching from said one set of quantizer matrix  
4 tables to said another set of quantizer matrix tables  
5 without delaying encoding of said sequence of video data by  
6 said encoder.

1           4.    The encoder of claim 3, wherein said means for  
2   dynamically switching further comprises a table set register  
3   within said quantizer adapted to control said switching of  
4   said quantizer from said one set of quantization matrix  
5   tables to said another set of quantization matrix tables.

1           5.    The encoder of claim 1, wherein at least one table  
2   of said one set of quantization matrix tables comprises a  
3   default quantization matrix table pursuant to MPEG standard.

1           6.    The encoder of claim 1, wherein multiple tables of  
2   said one set of quantization matrix tables comprise default  
3   quantization matrix tables pursuant to MPEG standard.

1           7.    The encoder of claim 1, wherein at least one table  
2   of said another set of quantization matrix tables comprises  
3   a user's custom quantization matrix table.

1           8.    The encoder of claim 1, wherein multiple tables of  
2   said another set of quantization matrix tables comprises a  
3   user's custom quantization matrix tables.

1           9.    The encoder of claim 1, wherein each set of  
2   quantization matrix tables of said multiple sets of  
3   quantization matrix tables comprises at least one  
4   quantization matrix table, each quantization matrix table of  
5   said at least one quantization matrix table comprising one  
6   of a default quantization matrix table pursuant to MPEG  
7   standard or a user's custom quantization matrix table.

1           10.   The encoder of claim 1, wherein each set of  
2   quantization matrix tables comprises an intra luminance  
3   table and a non-intra luminance table.

1        11. The encoder of claim 1, wherein each set of said  
2 multiple sets of quantization matrix tables comprises an  
3 intra luminance table, a non-intra luminance table, an intra  
4 chrominance table, and a non-intra chrominance table.

1        12. The encoder of claim 1, further comprising means  
2 for dynamically changing quantization matrix tables of a  
3 presently unused set of quantization matrix tables of said  
4 multiple sets of quantization matrix tables while quantizing  
5 said sequence of video data using said one set of  
6 quantization matrix tables or said another set of  
7 quantization matrix tables.

1        13. The encoder of claim 1, further comprising a  
2 compressed store interface for outputting a compressed  
3 bitstream produced by said encoder from said sequence of  
4 video data, said compressed store interface including means  
5 for dynamically outputting a quantization matrix extension  
6 start code in said compressed bitstream upon switching of  
7 said quantizer from using said one set of quantization  
8 matrix tables to using said another set of quantization  
9 matrix tables.

1        14. The encoder of claim 13, wherein said compressed  
2 store interface further comprises storage for also holding  
3 said multiple sets of quantization matrix tables.

1        15. The encoder of claim 13, wherein said means for  
2 dynamically outputting said quantization matrix extension  
3 start code comprises means for outputting said another set  
4 of quantization matrix tables in said compressed bitstream  
5 upon said quantizer switching from said one set of  
6 quantization matrix tables to said another set of  
7 quantization matrix tables.



1 ~~SUB A2~~ 18. A method for encoding a sequence of video data,  
2 said method comprising:

3 providing storage for holding multiple sets of  
4 quantization matrix tables;

5 quantizing the sequence of video data using one  
6 set of quantization matrix tables of said multiple sets  
7 of quantization matrix tables; and

8 dynamically switching said quantizing from using  
9 said one set of quantization matrix tables to using  
10 another set of quantization matrix tables of said  
11 multiple sets of quantization matrix tables.

1 19. The method of claim 18, wherein said dynamically  
2 switching comprises switching said quantizing from using  
3 said one set of quantizer matrix tables to using said  
4 another set of quantizer matrix tables at a picture boundary  
5 of said sequence of video data.

1 20. The method of claim 19, wherein said switching of  
2 said quantizing at said picture boundary comprises switching  
3 from said one set of quantizer matrix tables to said another  
4 set of quantizer matrix tables without delaying encoding of  
5 said sequence of video data.

1 21. The method of claim 18, wherein at least one table  
2 of said one set of quantization matrix tables comprises a  
3 default quantization matrix table pursuant to MPEG standard  
4 or a user's custom quantization matrix table.

1        22. The method of claim 18, wherein at least one table  
2 of said another set of quantization matrix tables comprises  
3 a default quantization matrix table pursuant to MPEG  
4 standard or a user's custom quantization matrix table.

1        23. The method of claim 18, wherein each set of said  
2 multiple sets of quantization matrix tables comprises an  
3 intra luminance table and a non-intra luminance table.

1        24. The method of claim 18, wherein each set of said  
2 multiple sets of quantization matrix tables comprises an  
3 intra luminance table, a non-intra luminance table, an intra  
4 chrominance table, and a non-intra chrominance table.

1        25. The method of claim 18, further comprising  
2 dynamically changing quantization matrix tables of a  
3 presently unused set of quantization matrix tables of said  
4 multiple sets of quantization matrix tables while quantizing  
5 said sequence of video data using said one set of  
6 quantization matrix tables or said another set of  
7 quantization matrix tables.

1        26. The method of claim 18, further comprising  
2 producing a compressed bitstream employing a compressed  
3 store interface, said producing comprising dynamically  
4 outputting a quantization matrix extension start code in  
5 said compressed bitstream upon said switching from said one  
6 set of quantization matrix tables to said another set of  
7 quantization matrix tables.

1        27. The method of claim 26, wherein said dynamically  
2 outputting comprises outputting said quantization matrix  
3 extension start code in said compressed bitstream without  
4 pausing said encoding of said sequence of video data.

1           28. The method of claim 26, further comprising  
2   changing quantization matrix tables in a presently unused  
3   set of said multiple sets of quantization matrix tables  
4   while quantizing said sequence of video data using said one  
5   set of quantization matrix tables or said another set of  
6   quantization matrix tables.

1 SUB A3 29. An article of manufacture comprising:

2 a computer program product comprising computer  
3 usable medium having computer readable program code  
4 means therein for use in encoding a sequence of video  
5 data, said computer readable program code means in said  
6 computer program product comprising:

7 computer readable program code means for  
8 causing a computer to effect storing multiple sets  
9 of quantization matrix tables;

10 computer readable program code means for  
11 causing a computer to effect quantizing the  
12 sequence of video data using one set of  
13 quantization matrix tables of said multiple sets  
14 of quantization matrix tables; and

15 computer readable program code means for  
16 causing a computer to effect dynamically switching  
17 said quantizing from using said one set of  
18 quantization matrix tables to using another set of  
19 quantization matrix tables of said multiple sets  
20 of quantization matrix tables.

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